

(19)日本国特許庁 (J P)

(12) 公 開 特 許 公 報 (A)

(11)特許出願公開番号

特開平5-292497

(43)公開日 平成5年(1993)11月5日

(51)Int.Cl. <sup>5</sup>	識別記号	庁内整理番号	F I	技術表示箇所
H 0 4 N 7/15		8943-5C		
H 0 4 M 3/56	C			

審査請求 未請求 請求項の数2(全 8 頁)

(21)出願番号 特願平4-96153

(22)出願日 平成4年(1992)4月16日

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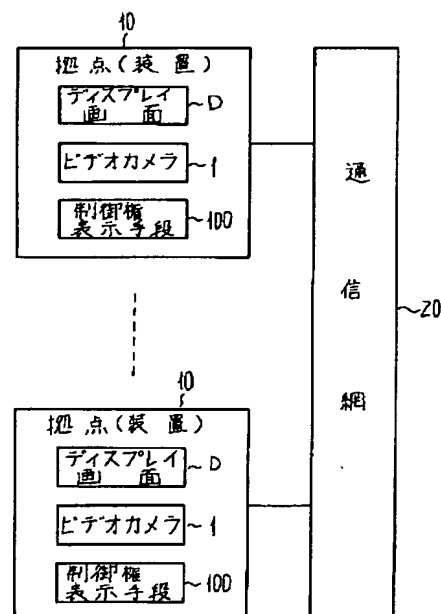
(54)【発明の名称】 テレビ会議カメラ制御方式

(57)【要約】

【目的】 複数の拠点間で会議を行うテレビ会議システムにおけるテレビ会議カメラ制御方式に関し、各拠点のビデオカメラの制御権の保持状況を、短時間に、且つ不要の操作を伴うことなく認識可能とすることを目的とする。

【構成】 拠点装置10に、各拠点装置内のビデオカメラ1の制御権の保持状態（例えば自拠点装置がビデオカメラの制御権を保持する拠点10と、保持中の制御権の委譲を要求される拠点等）を、各拠点のディスプレイ画面（D）内に表示する制御権表示手段100を設ける様に構成する。

本発明の原理図



**【特許請求の範囲】**

【請求項1】 複数の拠点（10）に設置された拠点装置（10）を通信網（20）を経由して相互に接続し、前記各拠点間で会議を行うテレビ会議システムにおいて、

前記拠点装置（10）に、前記各拠点装置（10）内のビデオカメラ（1）の制御権の保持状態を、前記各拠点のディスプレイ画面（D）内に表示する制御権表示手段（100）を設けることを特徴とするテレビ会議カメラ制御方式。

【請求項2】 前記制御権表示手段（100）は、自拠点装置（10）がビデオカメラ（1）の制御権を保持する拠点（10）と、保持中の制御権の委譲を要求される拠点（10）とを、前記制御権の保持状態として表示することを特徴とする請求項1記載のテレビ会議カメラ制御方式。

**【発明の詳細な説明】****【0001】**

【産業上の利用分野】本発明は、複数の拠点間で会議を行うテレビ会議システムにおけるテレビ会議カメラ制御方式に関する。

**【0002】**

【従来の技術】図4は従来あるテレビ会議システムの一例を示す図である。図4に例示されるテレビ会議システムは、三か所の会議場にそれぞれテレビ会議装置（以後会議場を拠点10と称し、またテレビ会議装置を拠点装置10と称し、個々の拠点および拠点装置を10<sub>1</sub>、10<sub>2</sub>および10<sub>3</sub>と称する）が設置されており、更に各拠点装置10が通信網20を経由して相互に接続されている。

【0003】各拠点装置10は、それぞれビデオカメラ1、カメラ制御装置2、リモート制御装置3、ディスプレイ装置4、ディスプレイ制御装置5および通信制御装置6から構成されており、ビデオカメラ1がカメラ制御装置2の制御の下に各拠点10の状況を撮影し、通信制御装置6および通信網20を経由して各拠点装置10に配送し、各拠点装置10のディスプレイ制御装置5の制御の下にディスプレイ装置4に表示する。なお図4においては、拠点装置10<sub>1</sub>の構成のみが詳細に表示され、他の拠点装置10<sub>2</sub>および10<sub>3</sub>は拠点装置10<sub>1</sub>と同様である為、省略されている。

【0004】なお、各ビデオカメラ1の撮影方向および撮影範囲等は、自拠点装置10内のリモート制御装置3により制御されるのみならず、他拠点装置10内のリモート制御装置3によっても制御される。

【0005】例えば拠点10<sub>1</sub>のカメラ制御装置2<sub>1</sub>に、同一拠点10<sub>1</sub>内のリモート制御装置3<sub>1</sub>からビデオカメラ1<sub>1</sub>の制御信号が伝達されると、カメラ制御装置2<sub>1</sub>はビデオカメラ1<sub>1</sub>の制御権をリモート制御装置3<sub>1</sub>に付与し、リモート制御装置3<sub>1</sub>の操作に従って

ビデオカメラ1<sub>1</sub>の撮影方向および撮影範囲等を制御する。

【0006】リモート制御装置3<sub>1</sub>の操作者は、ディスプレイ装置4<sub>1</sub>に表示される自拠点10<sub>1</sub>の撮影画面

〔以後拠点画面（S<sub>1</sub>）と称する、以下同様〕を観察することにより、自分がビデオカメラ1<sub>1</sub>の制御権を保持していることを認識する。

【0007】また拠点10<sub>1</sub>のカメラ制御装置2<sub>1</sub>に、他の拠点10（例えば拠点10<sub>2</sub>）のリモート制御装置3<sub>2</sub>からビデオカメラ1<sub>1</sub>の制御信号が伝達されると、カメラ制御装置2<sub>1</sub>はビデオカメラ1<sub>1</sub>の制御権をリモート制御装置3<sub>2</sub>に付与し、リモート制御装置3<sub>2</sub>の操作に従ってビデオカメラ1<sub>1</sub>の撮影方向および撮影範囲等を制御する。

【0008】リモート制御装置3<sub>2</sub>の操作者は、自拠点10<sub>2</sub>内のディスプレイ装置4<sub>2</sub>に表示される拠点画面（S<sub>1</sub>）を観察することにより、自分がビデオカメラ1<sub>1</sub>の制御権を獲得していることを認識する。

【0009】なお複数拠点10（例えば拠点10<sub>1</sub>および10<sub>2</sub>）のリモート制御装置3<sub>1</sub>および3<sub>2</sub>が、同時にビデオカメラ1<sub>1</sub>の制御信号をカメラ制御装置2<sub>1</sub>に伝達した場合には、カメラ制御装置2<sub>1</sub>は所定の競合制御手順に従って、何れか一方のリモート制御装置3（例えばリモート制御装置3<sub>1</sub>）に制御権を付与し、以後リモート制御装置3<sub>1</sub>の操作に従ってビデオカメラ1<sub>1</sub>の撮影方向および撮影範囲等を制御するが、リモート制御装置3<sub>1</sub>および3<sub>2</sub>の操作者は、それぞれ自分がビデオカメラ1<sub>1</sub>の制御権を獲得したものとして暫く操作を行った結果、リモート制御装置3<sub>1</sub>の操作者は拠点画面（S<sub>1</sub>）が自分の操作通りに変化することを確認し、ビデオカメラ1<sub>1</sub>の制御権を保持していると確信するが、リモート制御装置3<sub>2</sub>の操作者は拠点画面（S<sub>1</sub>）が自分の操作通りに変化しないことに気が付き、ビデオカメラ1<sub>1</sub>の制御権を保持していないと判断する。

**【0010】**

【発明が解決しようとする課題】以上の説明から明らかな如く、従来あるテレビ会議システムにおいては、各拠点10<sub>1</sub>および10<sub>2</sub>のリモート制御装置3<sub>1</sub>および3<sub>2</sub>の操作者は、所望のビデオカメラ1<sub>1</sub>の制御権を保持したか否かを、暫くビデオカメラ1<sub>1</sub>の操作を実行した結果、拠点画面（S<sub>1</sub>）が自分の操作通りに変化するか否かを観察することにより、漸く認識することとなり、制御権保持の確認迄に長時間を要すると共に、その間、不要の操作を実行する不便さがあった。

【0011】本発明は、各拠点のビデオカメラの制御権の保持状況を、短時間に、且つ不要の操作を伴うことなく認識可能とすることを目的とする。

**【0012】**

【課題を解決するための手段】図1は本発明の原理を示す図である。図1において、10は複数の拠点、および

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該拠点10に設置された拠点装置、20は各拠点装置10を相互に接続する通信網、1は各拠点装置10内のビデオカメラ、Dは各拠点のビデオカメラ1の撮影結果を表示したディスプレイ画面である。

【0013】100は、本発明により各拠点装置10に設けられた制御権表示手段である。

【0014】

【作用】制御権表示手段100は、各拠点装置10内のビデオカメラ1の制御権の保持状態を、各拠点のディスプレイ画面(D)内に表示する。

【0015】なお制御権表示手段100は、自拠点装置10がビデオカメラ1の制御権を保持する拠点10と、保持中の制御権の委譲を要求される拠点10とを、制御権の保持状態として表示することが考慮される。

【0016】従って、各拠点のビデオカメラの制御権の保持状況が、ディスプレイ画面を観察することにより直ちに認識可能となる為、余分のビデオカメラの操作を行う必要も無くなり、当該テレビ会議システムの利便性および操作性が大幅に向上する。

【0017】

【実施例】以下、本発明の一実施例を図面により説明する。図2は本発明の一実施例によるテレビ会議システムを示す図であり、図3は図2におけるビデオカメラ制御過程の一例を示す図である。なお、全図を通じて同一符号は同一対象物を示す。また対象とするテレビ会議システムは、図4と同様、三つの拠点装置10と通信網20とから構成されるものとする。

【0018】なお図2においても、三つの拠点装置10の内、拠点装置10<sub>1</sub>のみの構成が詳細に表示され、その他の拠点装置10<sub>2</sub>および10<sub>3</sub>は省略されている。図2においては、図1における制御権表示手段100として制御拠点表示部21、制御権メモリ23およびタイマ24が各拠点装置10のカメラ制御装置2内に設けられている。

【0019】制御権メモリ23内には、各拠点10のビデオカメラ1の制御権を現在保持しているリモート制御装置3を示す制御権保持情報(C)〔個々のリモート制御装置3<sub>1</sub>、3<sub>2</sub>および3<sub>3</sub>に対応する制御権保持情報を(C<sub>1</sub>)、(C<sub>2</sub>)および(C<sub>3</sub>)と、制御権の委譲を現在要求しているリモート制御装置3が存在すれば、要求元のリモート制御装置3を示す制御権要求情報(R)とが、各ビデオカメラ1<sub>1</sub>、1<sub>2</sub>および1<sub>3</sub>の対応領域231、232および233に格納されている。

【0020】また制御拠点表示部21は、ディスプレイ制御装置5を介してディスプレイ装置4に表示されるディスプレイ画面(D)の一部に、各拠点10のビデオカメラ1の制御権の保持状態を示す制御拠点画面(S<sub>C</sub>)を、拠点画面(S<sub>1</sub>)、(S<sub>2</sub>)および(S<sub>3</sub>)と共に表示する。

【0021】制御拠点画面(S<sub>C</sub>)は、各ビデオカメラ1<sub>1</sub>、1<sub>2</sub>および1<sub>3</sub>に対応する領域(S<sub>d<sub>1</sub></sub>)、(S<sub>d<sub>2</sub></sub>)および(S<sub>d<sub>3</sub></sub>)から構成されており、制御拠点表示部21は、自拠点10内のリモート制御装置3が制御権を保持しているビデオカメラ1<sub>i</sub>対応領域(S<sub>d<sub>i</sub></sub>) (但しiは1乃至3の何れか)を赤色表示し、他拠点10のリモート制御装置3が制御権を保持しているビデオカメラ1<sub>j</sub>対応領域(S<sub>d<sub>j</sub></sub>) (但しjは≠iなる1乃至3の何れか)を緑色表示し、更に自拠点10のリモート制御装置3が制御権を保持中のビデオカメラ1<sub>i</sub>に対して他拠点10のリモート制御装置3から制御権の委譲が要求された場合には、赤色表示中のビデオカメラ1<sub>i</sub>対応領域(S<sub>d<sub>i</sub></sub>)を点滅させる。

【0022】図2および図3において、当該テレビ会議システムが運用開始されると、各拠点装置10においては、カメラ制御装置2内のプロセッサ22が、制御権メモリ23の各ビデオカメラ1<sub>1</sub>、1<sub>2</sub>および1<sub>3</sub>対応領域321、232および233に、それぞれ制御権保持情報(C<sub>1</sub>)、(C<sub>2</sub>)および(C<sub>3</sub>)を格納すると共に、制御権要求情報(R)は総て削除することにより、各ビデオカメラ1の制御権を自拠点装置10内のリモート制御装置3に付与させる(図3ステップS1)。

【0023】各制御拠点表示部21は、各制御権メモリ23の格納内容に基づき、ディスプレイ装置4に表示されたディスプレイ画面(D)上の制御拠点画面(S<sub>C</sub>)を制御する。

【0024】例えば拠点10<sub>1</sub>における制御拠点表示部21<sub>1</sub>は、制御拠点画面(S<sub>C1</sub>)内のビデオカメラ1<sub>1</sub>対応領域(S<sub>d<sub>11</sub></sub>)を赤色に、ビデオカメラ1<sub>2</sub>および1<sub>3</sub>対応領域(S<sub>d<sub>21</sub></sub>)および(S<sub>d<sub>31</sub></sub>)を緑色に表示し、また拠点10<sub>2</sub>における制御拠点表示部21<sub>2</sub>は、制御拠点画面(S<sub>C2</sub>)内のビデオカメラ1<sub>2</sub>対応領域(S<sub>d<sub>22</sub></sub>)を赤色に、ビデオカメラ1<sub>1</sub>および1<sub>3</sub>対応領域(S<sub>d<sub>12</sub></sub>)および(S<sub>d<sub>32</sub></sub>)を緑色に表示し、更に拠点10<sub>3</sub>における制御拠点表示部21<sub>3</sub>は、制御拠点画面(S<sub>C3</sub>)内のビデオカメラ1<sub>3</sub>対応領域(S<sub>d<sub>33</sub></sub>)を赤色に、ビデオカメラ1<sub>1</sub>および1<sub>2</sub>対応領域(S<sub>d<sub>13</sub></sub>)および(S<sub>d<sub>23</sub></sub>)を緑色に表示する。

【0025】各プロセッサ22は、自ビデオカメラ1に対する制御権の委譲要求が発生するか否かを監視している(ステップS2)。かかる状態で、拠点10<sub>2</sub>のリモート制御装置3<sub>2</sub>が、拠点10<sub>1</sub>のビデオカメラ1<sub>1</sub>の制御権の委譲を要求し、カメラ制御装置2<sub>2</sub>に対してビデオカメラ1<sub>1</sub>の制御権要求信号を転送すると、カメラ制御装置2<sub>2</sub>内のプロセッサ22<sub>2</sub>は制御権メモリ23<sub>2</sub>のビデオカメラ1<sub>1</sub>対応領域231<sub>2</sub>に制御権保持情報(C<sub>1</sub>)が格納されていることを認識すると、通信網20を経由して現在ビデオカメラ1<sub>1</sub>の制御権を保持している拠点装置10<sub>1</sub>に対し、ビデオカメラ1<sub>1</sub>の制御権要求信号を転送する。

【0026】拠点装置10<sub>1</sub>においては、カメラ制御装置2<sub>1</sub>内のプロセッサ22<sub>1</sub>が、リモート制御装置3<sub>2</sub>から通信網20および通信制御装置6<sub>1</sub>を経由して転送されたビデオカメラ1<sub>1</sub>の制御権要求信号を受信すると（ステップS3）、制御権メモリ23<sub>1</sub>内のビデオカメラ1<sub>1</sub>対応領域231<sub>1</sub>に、リモート制御装置3<sub>2</sub>から制御権の委譲を要求されていることを示す制御権要求情報（R<sub>2</sub>）を格納する。

【0027】制御拠点表示部21<sub>1</sub>は、制御権メモリ23<sub>1</sub>のビデオカメラ1<sub>1</sub>対応領域231<sub>1</sub>に、制御権要求情報（R<sub>2</sub>）が新たに格納されたことを検出すると、ディスプレイ制御装置5<sub>1</sub>を介してディスプレイ装置4<sub>1</sub>に表示されるディスプレイ画面（D<sub>1</sub>）上の制御拠点画面（S<sub>C1</sub>）の、赤色表示されているビデオカメラ1<sub>1</sub>対応領域（S<sub>d11</sub>）を点滅させ、ビデオカメラ1<sub>1</sub>の制御権を他のリモート制御装置3<sub>2</sub>または3<sub>3</sub>が委譲を要求していることを表示する（ステップS4）。

【0028】制御拠点表示部21<sub>1</sub>がビデオカメラ1<sub>1</sub>対応領域（S<sub>d11</sub>）を点滅させると、プロセッサ22<sub>1</sub>はタイマ24<sub>1</sub>を起動し、リモート制御装置3<sub>1</sub>から拒絶信号が転送されるか否かを待機する（ステップS5）。

【0029】リモート制御装置3<sub>1</sub>の操作者は、ディスプレイ装置4<sub>1</sub>に表示されるディスプレイ画面（D<sub>1</sub>）内の制御拠点画面（S<sub>C1</sub>）の、赤色表示中のビデオカメラ1<sub>1</sub>対応領域（S<sub>d11</sub>）が点滅を開始したことを観察し、自拠点10<sub>1</sub>のビデオカメラ1<sub>1</sub>の制御権の委譲を、他拠点10<sub>2</sub>または10<sub>3</sub>のリモート制御装置3<sub>2</sub>または3<sub>3</sub>から要求されていることを認識し、制御権の委譲に異存無ければ、リモート制御装置3<sub>1</sub>から何等の拒絶信号をカメラ制御装置2<sub>1</sub>に送出しない。

【0030】カメラ制御装置2<sub>1</sub>内のプロセッサ22<sub>1</sub>は、タイマ24<sub>1</sub>が所定のタイマ時間の経過を告げる迄に、リモート制御装置3<sub>1</sub>から拒絶信号が転送されなかった場合には（ステップS6）、リモート制御装置3<sub>2</sub>から要求されたビデオカメラ1<sub>1</sub>の制御権の委譲がリモート制御装置3<sub>1</sub>により許容されたものと判定し、制御権メモリ23<sub>1</sub>のビデオカメラ1<sub>1</sub>対応領域231<sub>1</sub>内の制御権保持情報（C<sub>1</sub>）を制御権保持情報（C<sub>2</sub>）に更新すると共に制御権要求情報（R<sub>2</sub>）を削除し、また先に転送された制御権要求信号に対する許容信号を、通信制御装置6<sub>1</sub>および通信網20を経由して拠点装置10<sub>2</sub>に返送し、更にタイマ24<sub>1</sub>をリセットする。

【0031】制御拠点表示部21<sub>1</sub>は、制御権メモリ23<sub>1</sub>のビデオカメラ1<sub>1</sub>対応領域231<sub>1</sub>の制御権保持情報（C<sub>1</sub>）が制御権保持情報（C<sub>2</sub>）に更新され、且つ制御権要求情報（R<sub>2</sub>）が削除されたことを検出すると、ディスプレイ制御装置5<sub>1</sub>を介してディスプレイ装置4<sub>1</sub>に表示されているディスプレイ画面（D<sub>1</sub>）内の制御拠点画面（S<sub>C1</sub>）の、赤色表示されて点滅している

ビデオカメラ1<sub>1</sub>対応領域（S<sub>d11</sub>）を緑色に表示させ、ビデオカメラ1<sub>1</sub>の制御権が他のリモート制御装置3<sub>2</sub>または3<sub>3</sub>に委譲されたことを表示する（ステップS7）。

【0032】一方拠点10<sub>2</sub>においては、カメラ制御装置2<sub>2</sub>内のプロセッサ22<sub>2</sub>が、拠点装置10<sub>1</sub>から転送された許容信号を受信すると、ビデオカメラ1<sub>1</sub>の制御権をリモート制御装置3<sub>2</sub>に委譲されたと認識し、制御権メモリ23<sub>2</sub>内のビデオカメラ1<sub>1</sub>対応領域231<sub>2</sub>に格納されている制御権保持情報（C<sub>1</sub>）を制御権保持情報（C<sub>2</sub>）に更新する。

【0033】制御拠点表示部21<sub>2</sub>は、制御権メモリ23<sub>2</sub>のビデオカメラ1<sub>1</sub>対応領域231<sub>2</sub>の制御権保持情報（C<sub>1</sub>）が制御権保持情報（C<sub>2</sub>）に更新されたことを検出すると、ディスプレイ制御装置5<sub>2</sub>を介してディスプレイ装置4<sub>2</sub>に表示されているディスプレイ画面（D<sub>2</sub>）内の制御拠点画面（S<sub>C2</sub>）の、緑色表示されているビデオカメラ1<sub>1</sub>対応領域（S<sub>d12</sub>）を赤色に表示させ、ビデオカメラ1<sub>1</sub>の制御権が自リモート制御装置3<sub>2</sub>に委譲されたことを表示する。

【0034】リモート制御装置3<sub>2</sub>の操作者は、ディスプレイ装置4<sub>2</sub>に表示されたディスプレイ画面（D<sub>2</sub>）内の制御拠点画面（S<sub>C2</sub>）の、緑色表示中のビデオカメラ1<sub>1</sub>対応領域（S<sub>d12</sub>）が赤色に変化したことを観察し、ビデオカメラ1<sub>1</sub>の制御権が委譲されたことを認識し、直ちにリモート制御装置3<sub>2</sub>を操作し、ビデオカメラ1<sub>1</sub>の制御を開始すると、ビデオカメラ1<sub>1</sub>の制御信号が、通信網20を経由して拠点装置10<sub>1</sub>に転送される。

【0035】拠点10<sub>1</sub>においては、カメラ制御装置2<sub>1</sub>内のプロセッサ22<sub>1</sub>が、リモート制御装置3<sub>2</sub>から通信網20および通信制御装置6<sub>1</sub>を経由して転送される制御信号に基づき、ビデオカメラ1<sub>1</sub>を制御する（ステップS8）。

【0036】なおリモート制御装置3<sub>1</sub>の操作者が、ディスプレイ装置4<sub>1</sub>に表示されるディスプレイ画面（D<sub>1</sub>）内の制御拠点画面（S<sub>C1</sub>）の、赤色表示中のビデオカメラ1<sub>1</sub>対応領域（S<sub>d11</sub>）が点滅を開始したことを観察し、自拠点のビデオカメラ1<sub>1</sub>の制御権の委譲を他拠点のリモート制御装置3<sub>2</sub>または3<sub>3</sub>から要求されていることを認識したが、制御権の委譲に不承知であれば、リモート制御装置3<sub>1</sub>から拒絶信号をカメラ制御装置2<sub>1</sub>に転送する。

【0037】カメラ制御装置2<sub>1</sub>内のプロセッサ22<sub>1</sub>は、タイマ24<sub>1</sub>が所定のタイマ時間の経過を告げる迄に、リモート制御装置3<sub>1</sub>から拒絶信号が転送された場合には（ステップS6）、リモート制御装置3<sub>2</sub>から要求されたビデオカメラ1<sub>1</sub>の制御権の委譲が、リモート制御装置3<sub>1</sub>により拒絶されたものと判定し、制御権メモリ23<sub>1</sub>内のビデオカメラ1<sub>1</sub>対応領域231<sub>1</sub>に格

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納される制御権保持情報 ( $C_1$ ) を更新せずに、制御権要求情報 ( $R_2$ ) のみを削除し、また先に転送された制御権要求信号に対する許容信号を返送せず、更にタイマ  $24_1$  をリセットする。

【0038】制御拠点表示部  $21_1$  は、制御権メモリ  $23_1$  のビデオカメラ  $1_1$  対応領域の制御権要求情報 ( $R_2$ ) が削除されたことを検出すると、ディスプレイ制御装置  $5_1$  を介してディスプレイ装置  $4_1$  に表示されるディスプレイ画面 ( $D_1$ ) 内の制御拠点画面 ( $S_{C1}$ ) の、赤色表示されてビデオカメラ  $1_1$  対応領域 ( $S_{d11}$ ) の点滅を停止させ、ビデオカメラ  $1_1$  の制御権を他のリモート制御装置  $3_2$  または  $3_3$  に委譲しなかったことを表示する (ステップ  $S7$ )。

【0039】一方拠点  $10_2$  においては、カメラ制御装置  $2_2$  が拠点装置  $10_1$  に対して制御権要求信号を転送しても、許容信号が返送されぬ限り、ビデオカメラ  $1_1$  の制御権をリモート制御装置  $3_2$  に委譲されていないと認識し、制御権メモリ  $23_2$  内のビデオカメラ  $1_1$  対応領域  $231_2$  に格納されている制御権保持情報 ( $C_1$ ) を現状維持する。

【0040】制御拠点表示部  $21_2$  は、制御権メモリ  $23_2$  内のビデオカメラ  $1_1$  対応領域  $231_2$  の制御権保持情報 ( $C_1$ ) が制御権保持情報 ( $C_2$ ) に更新されない為、ディスプレイ装置  $4_2$  に表示されるディスプレイ画面 ( $D_2$ ) 内の制御拠点画面 ( $S_{C2}$ ) の、緑色表示されているビデオカメラ  $1_1$  対応領域 ( $S_{d12}$ ) を現状維持させ、ビデオカメラ  $1_1$  の制御権が自リモート制御装置  $3_2$  に委譲されていないことを表示する。

【0041】リモート制御装置  $3_2$  の操作者は、ディスプレイ装置  $4_2$  に表示されるディスプレイ画面 ( $D_2$ ) 内の制御拠点画面 ( $S_{C2}$ ) の、ビデオカメラ  $1_1$  対応領域 ( $S_{d12}$ ) が緑色表示を維持していることを観察し、ビデオカメラ  $1_1$  の制御権が委譲されていないことを認識し、暫くしてから再度制御権の委譲要求操作を実行する。

【0042】以上の説明から明らかな如く、本実施例によれば、各拠点のディスプレイ画面 ( $D$ ) には、自拠点  $10$  のリモート制御装置  $3$  が各拠点  $10$  のビデオカメラ  $1$  の制御権を保持しているか否かが制御拠点画面 ( $S_C$ ) により表示されており、自リモート制御装置  $3$  が制御権を保持しているビデオカメラ  $1$  に対しては安心

して制御操作を実行可能となり、また新たに制御権を要求した場合にも、要求結果が直ちに制御拠点画面

( $S_C$ ) に表示される為、委譲済の場合には直ちにビデオカメラ  $1$  の操作を開始することが可能となる。

【0043】なお、図2および図3はあく迄本発明の一実施例に過ぎず、例えば制御拠点画面 ( $S_C$ ) の表示状態は図示されるものに限定されることは無く、他に幾多の変形が考慮されるが、何れの場合にも本発明の効果は変わらない。また本発明の対象となるテレビ会議システムは、三つの拠点装置  $10$  から構成されるものに限定されることは無く、他に幾多の変形が考慮されるが、何れの場合にも本発明の効果は変わらない。

【0044】

【発明の効果】以上、本発明によれば、前記テレビ会議システムにおいて、各拠点のビデオカメラの制御権の保持状況が、ディスプレイ画面を観察することにより直ちに認識可能となる為、余分のビデオカメラの操作を行う必要も無くなり、当該テレビ会議システムの利便性および操作性が大幅に向上する。

【図面の簡単な説明】

【図1】 本発明の原理を示す図

【図2】 本発明の一実施例によるテレビ会議システムを示す図

【図3】 図2におけるビデオカメラ制御過程の一例を示す図

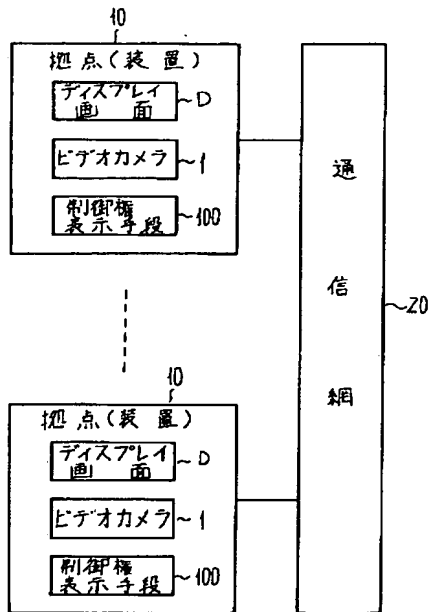
【図4】 従来あるテレビ会議システムの一例を示す図

【符号の説明】

- 1 ビデオカメラ
- 2 カメラ制御装置
- 3 リモート制御装置
- 4 ディスプレイ装置
- 5 ディスプレイ制御装置
- 6 通信制御装置
- 10 拠点、拠点装置
- 20 通信網
- 21 制御拠点表示部
- 22 プロセッサ
- 23 制御権メモリ
- 24 タイマ
- 100 制御権表示手段

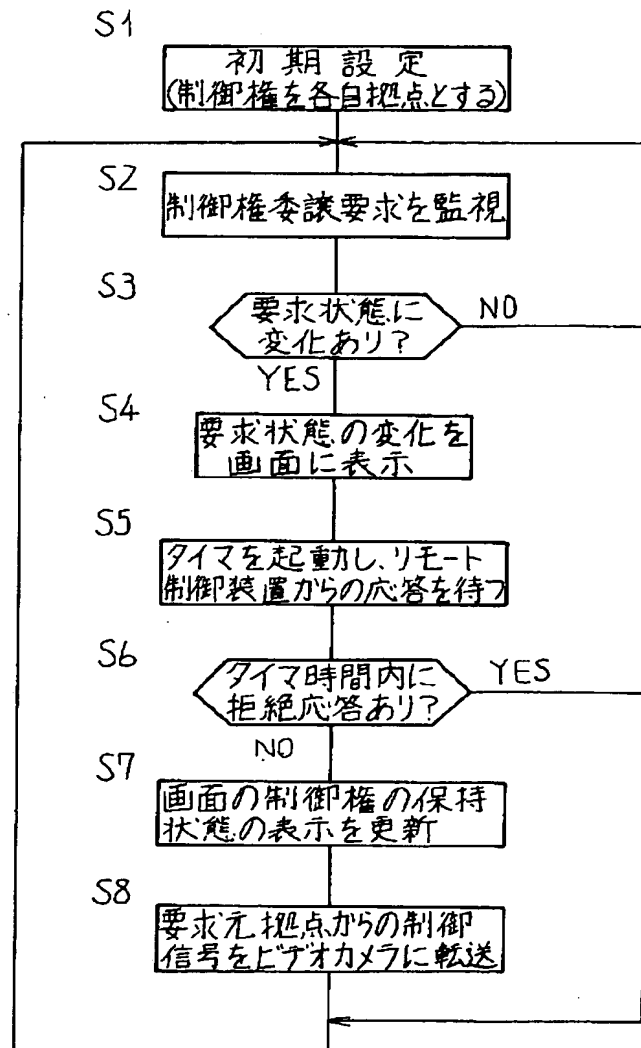
【図1】

本発明の原理図



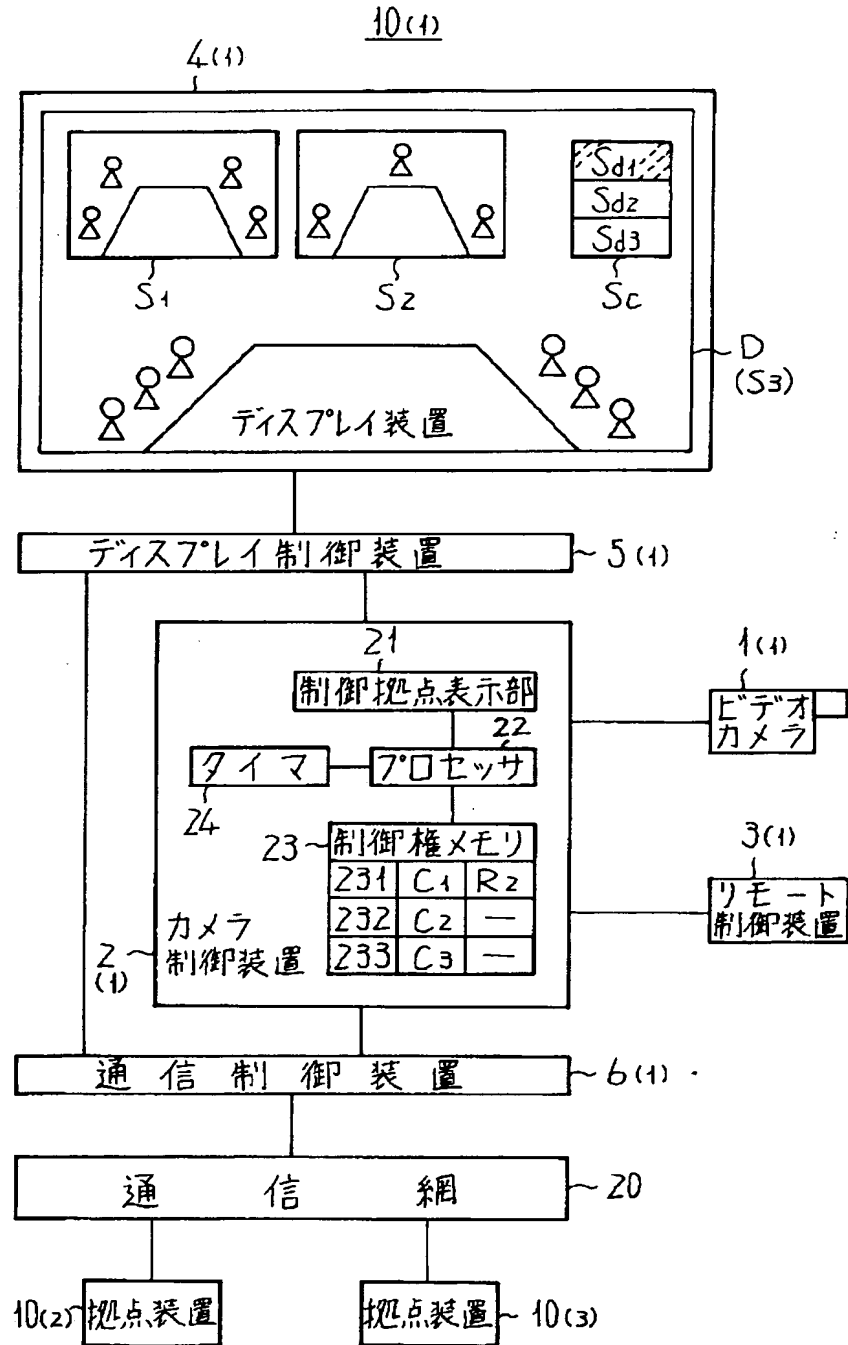
【図3】

図2におけるビデオカメラ制御過程



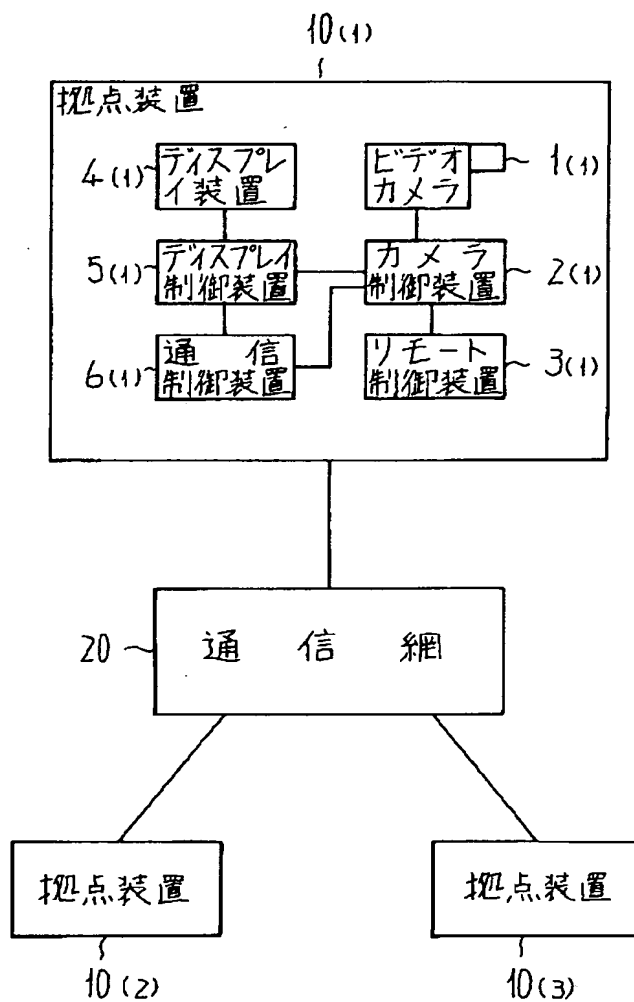
【図2】

## 本発明によるテレビ会議システム



【図4】

## 従来あるテレビ会議システム





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CLAIMS

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[Claim(s)]

[Claim 1] In the video conference system which connects mutually the base equipment (10) installed in two or more bases (10) via a communication network (20), and holds a conference during said each base The television conference camera control system characterized by forming a control display means (100) to display the maintenance condition of the control of the video camera (1) in said each base equipment (10) in the display screen (D) of each of said base in said base equipment (10).

[Claim 2] Said control display means (100) is a television conference camera control system according to claim 1 characterized by self-base equipment (10) displaying the base (10) holding the control of a video camera (1), and the base (10) of which the transfer of the control under maintenance is required as a maintenance condition of said control.

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[Translation done.]

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] Drawing showing the principle of this invention

[Drawing 2] Drawing showing the video conference system by one example of this invention

[Drawing 3] Drawing showing an example of the video camera control process in drawing 2

[Drawing 4] Drawing showing an example of a certain video conference system conventionally

[Description of Notations]

1 Video Camera

2 Camera Control Unit

3 Remote Controller

4 Display Unit

5 Display Control Unit

6 Communication Controller

10 Base, Base Equipment

20 Communication Network

21 Control Base Display

22 Processor

23 Control Memory

24 Timer

100 Control Display Means

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[Translation done.]

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DETAILED DESCRIPTION

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## [Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the television conference camera control system in the video conference system which holds a conference during two or more bases.

[0002]

[Description of the Prior Art] Drawing 4 is drawing showing an example of a certain video conference system conventionally. As for the video conference system illustrated by drawing 4, television conference equipment (a conference hall is henceforth called a base 10, and television conference equipment is called base equipment 10, and each base and base equipment are called 101, 102, and 103) is installed in three conference halls, respectively, and each base equipment 10 is further connected mutually via the communication network 20.

[0003] Each base equipment 10 consists of a video camera 1, the camera control device 2, a remote controller 3, a display unit 4, a display control device 5, and CCE 6, respectively, and a video camera 1 photos the situation of each base 10 under control of the camera control device 2, delivers it to each base equipment 10 via CCE 6 and a communication network 20, and displays it on a display unit 4 under control of the display control device 5 of each base equipment 10. In addition, it sets to drawing 4 and is base equipment 101. Only a configuration is displayed on a detail and they are other base equipments 102. And 103 Base equipment 101 Since it is the same, it is omitted.

[0004] In addition, bearing of the exposure axis, photographic coverage, etc. of each video camera 1 are not only controlled by the remote controller 3 in self-base equipment 10, but are controlled by the remote controller 3 in other base equipment 10.

[0005] for example, base 101 Camera control device 21 The same base 101 Inner remote controller 31 from -- video camera 11 if a control signal is transmitted -- the camera control device 21 -- video camera 11 a control -- remote controller 31 giving -- remote controller 31 actuation -- following -- video camera 11 Bearing of the exposure axis, photographic coverage, etc. are controlled.

[0006] Remote controller 31 An operator is a display unit 41. Self-base 101 displayed He is a video camera 11 by observing ] like the following called a base screen (S1) after photography screen [ It recognizes holding the control.

[0007] moreover, base 101 Camera control unit 21 Remote controller 32 of other bases 10 (for example, base 102) from -- video camera 11 if a control signal is transmitted -- camera control unit 21 Video camera 11 a control -- remote controller 32 giving -- remote controller 32 actuation -- following -- video camera 11 Bearing of the exposure axis, photographic coverage, etc. are controlled.

[0008] Remote controller 32 An operator is the self-base 102. Inner display unit 42 By observing the base screen (S1) displayed, he is a video camera 11. It recognizes having acquired the control.

[0009] in addition, remote controllers 31 and 32 of two or more bases 10 (for example, a base 101 and 102) It is a video camera 11 to coincidence. It is the camera control unit 21 about a control signal. When it transmits Camera control unit 21 According to a predetermined contention control procedure, a control is given to one of the remote controllers 3 (for example, remote controller 31), and it is a remote controller 31 henceforth. Actuation is followed and it is a video camera 11. Although bearing of the exposure axis, photographic coverage, etc. are controlled Remote controller 31 And 32 An operator He is a video camera 11, respectively. As a result of operating it for a while as what acquired the control, it is a remote controller 31. An operator checks that a base screen (S1) changes as actuation of it, and is a video camera 11. Although it is sure that the control is held Remote controller 32 An operator notices that a base screen (S1) does not change as actuation of it, and is a video camera 11. It is judged that the control is not held.

[0010]

[Problem(s) to be Solved by the Invention] It sets to a certain video conference system conventionally so that clearly from the above explanation. Each base 101 And 102 Remote controller 31 And 32 An operator Desired video camera 11 It is [ whether the control was held and or not ] a video camera 11 for a while. As a result of performing actuation, by observing whether a base screen (S1) changes as actuation of it While recognizing gradually and requiring long duration by the check of control maintenance, there was inconvenient [ which performs unnecessary actuation in the meantime ].

[0011] this invention -- the maintenance situation of the control of the video camera of each base -- a short time -- and it aims at making recognition possible, without being accompanied by unnecessary actuation.

[0012]

[Means for Solving the Problem] Drawing 1 is drawing showing the principle of this invention. In drawing 1, it is the display screen as which the base equipment with which 10 was installed in two or more bases and these bases 10, the communication network with which 20 connects each base equipment 10 mutually, and 1 displayed the video camera in each base equipment 10, and D displayed the photography result of the video camera 1 of each base.

[0013] 100 is the control display means formed in each base equipment 10 by this invention.

[0014]

[Function] The control display means 100 displays the maintenance condition of the control of the video camera 1 in each base equipment 10 in the display screen (D) of each base.

[0015] In addition, it is taken into consideration that the control display means 100 displays the base 10 when self-base equipment 10 holds the control of a video camera 1, and the base 10 of which the transfer of the control under maintenance is required as a maintenance condition of a control.

[0016] Therefore, since recognition of the maintenance situation of the control of the video camera of each base is immediately attained by observing a display screen, the need of operating an excessive video camera is also lost and the convenience and operability of the video conference system concerned improve sharply.

[0017]

[Example] Hereafter, a drawing explains one example of this invention. Drawing 2 is drawing showing the video conference system by one example of this invention, and drawing 3 is drawing showing an example of the video camera control process in drawing 2. In addition, the same sign shows the same object through a complete diagram. Moreover, the target video conference system shall consist of three base equipments 10 and communication networks 20 like drawing 4.

[0018] In addition, it also sets to drawing 2 and they are the inside of three base equipments 10, and base equipment 101. A configuration is displayed on a detail and they are the other base equipments 102. And 103 It is omitted. In drawing 2, the control base display 21, the control memory 23, and a timer 24 are formed in the camera control unit 2 of each base equipment 10 as a control display means 100 in drawing 1.

[0019] The remote controller 31 of control maintenance (information C) [each which shows the remote controller 3 which is carrying out current maintenance of the control of the video camera 1 of each base 10 in the control memory 23, 32 And 33 Like (C1) and (C2) (C3) the following which carries out \*\*\*\*, if ] and the remote controller 3 which is carrying out the current demand of the transfer of a control exist, the control maintenance information that it corresponds The control demand information (R) which shows the remote controller 3 of a requiring agency is each video camera 11 and 12. And 13 It is stored in the correspondence fields 231, 232, and 233.

[0020] moreover, the control base screen (SC) which shows the maintenance condition of the control of the video camera 1 of each base 10 to a part of display screen (D) as which the control base display 21 is displayed on a display unit 4 through the display control device 5 — a base screen (S1) — and (S2) (S3) it displays.

[0021] A control base screen (SC) is each video camera 11 and 12. And 13 A corresponding field (Sd1), It consists of reaching (Sd3). (Sd2) The control base display 21 Video camera 1i to which the remote controller 3 within the self-base 10 holds the control The correspondence field (Sdi) (however, any of 1 thru/or 3 is i?) is indicated by red. Video camera 1j to which the remote controller 3 of the other bases 10 holds the control The correspondence field (Sdj) (!=i however, any of 1 thru/or 3 becoming is j?) is indicated by green. Furthermore, video camera 1i while the remote controller 3 of the self-base 10 is holding a control When it receives and the transfer of a control is required from the remote controller 3 of the other bases 10, it is video camera 1i red on display. A correspondence field (Sdi) is blinked.

[0022] In drawing 2 and drawing 3, if beginning of mission of the video conference system concerned is carried out, it will set to each base equipment 10. The processor 22 in the camera control device 2 Each video camera 11 of the control memory 23, 12 And 13 the correspondence fields 321, 232, and 233 — respectively — control maintenance information (C1) — and (C2) (C3), while storing Control demand information (R) makes the control of each video camera 1 give the remote controller 3 in self-base equipment 10 by deleting all ( drawing 3 step S1).

[0023] Each control base display 21 controls the control base screen (SC) on the display screen (D) displayed on the display unit 4 based on the contents of storing of each control memory 23.

[0024] for example, base 101 Control base display 211 which can be set Video camera 11 in a control base screen (SC1) A correspondence field (Sd11) in red video camera 12 and the field (Sd21) corresponding to 13 — and (Sd31) — green — displaying — moreover, base 102 Control base display 212 which can be set Video camera 12 in a control base screen (SC2) A correspondence field (Sd22) in red video camera 11 And 13 a correspondence field (Sd12) — and (Sd32) — green — displaying — further — base 103 Control base display 213 which can be set video camera 13 in a control base screen (SC3) a correspondence field (Sd33) — red — video camera 11 And 12 a correspondence field (Sd13) — and (Sd23) it displays green.

[0025] Each processor 22 is supervising whether the transfer demand of the control to the self-video camera 1 occurs (step S2). In this condition, it is a base 102. Remote controller 32 Base 101 Video camera 11 The transfer of a control is required and it is the camera control device 22. It receives and is a video camera 11. If a control demand signal is transmitted Camera control device 22 Inner processor 222 Control memory 232 Video camera 11 Field 2312 corresponding to correspondence If it recognizes that control maintenance information (C1) is stored It goes via a communication network 20 and is the current video camera 11. Base equipment 101 holding a control It receives and is a video camera 11. A control demand signal is transmitted.

[0026] base equipment 101 — the control demand information (R2) which shows that the transfer of a control is demanded from the remote controller 32 is stored in the inner video camera 11 correspondence field 2311. setting — camera control unit 21 Inner processor 221 Remote controller 32 from — a communication network 20 and CCE 61 Video camera 11 transmitted by going if a control demand signal is received (step S3) — control memory 231

[0027] Control base display 211 Control memory 231 Video camera 11 Correspondence field 2311 If it detects that control demand information (R2) was newly stored Display control device 51 It minds and is a display unit 41. The control base screen (SC1) on the display screen (D1) displayed, Video camera 11 by which it is indicated by red A correspondence field (Sd11) is blinked and it is a video camera 11. They are other remote controllers 32 about a control. Or 33 It indicates that it is demanding the transfer (step S4).

[0028] control base display 211 Video camera 11 if a correspondence field (Sd11) is blinked — processor 221 Timer 241 starting — remote controller 31 from — it stands by [ whether a refusal signal is transmitted and ] (step S5).

[0029] Remote controller 31 An operator is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, Video camera 11 red on display It observes that the correspondence field (Sd11) started flashing. self-base 101 Video camera 11 the transfer of a control — other bases 102 Or 103 Remote controllers 32 or 33 from — it recognizing, and what is demanded, if there is no objection in the transfer of a control remote controller 31 from — any refusal signal — camera control unit 21 Send out and there is nothing.

[0030] camera control unit 21 Inner processor 221 timer 241 until it tells the predetermined timer passage of time — remote controller 31 from — the case where a refusal signal is not transmitted — (step S6) — remote controller 32 from — demanded video camera 11 the transfer of a control — remote controller 31 It judges with what was permitted. Control memory 231 Video camera 11 Correspondence field 2311 While updating inner control maintenance information (C1) to control maintenance information (C2), control demand information (R2) is deleted. Moreover, the permissible signal over the control demand signal transmitted previously is gone via a communication controller 61 and a communication network 20, and it is base equipment 102. It returns and is a timer 241 further. It resets.

[0031] Control base display 211 Control memory 231 Video camera 11 Correspondence field 2311 Control maintenance information (C1) is updated by control maintenance information (C2). And when it detects that control demand information (R2) was deleted, it is the display control device 51. It minds and is a display unit 41. The control base screen (SC1) in the display screen (D1) currently displayed, Video camera 11 which it is indicated by red and is blinking A correspondence field (Sd11) is displayed green and it is a video camera 11. Remote controller 32 of others [ control ] Or 33 It indicates transferred (step S7).

[0032] the control maintenance information (C1) stored in the base 102 on the other hand is updated to control maintenance information (C2). setting — camera control unit 22 Inner processor 222 Base equipment 101 from — if the transmitted permissible signal is received — video camera 11 a control — remote controller 32 having been transferred — recognizing — control memory 232 Inner video camera 11 Correspondence field 2312

[0033] Control base display 212 Control memory 232 Video camera 11 Correspondence field 2312 If what control maintenance information (C1) was updated for by control maintenance information (C2) is detected Display control device 52 It minds and is a display unit 42. The control base screen (SC2) in the display screen (D2) currently displayed, Video camera 11 by which it is indicated by green A correspondence field (Sd12) is displayed on red, and it is a video camera 11. A control is the self-remote controller 32. It indicates transferred.

[0034] Remote controller 32 An operator is a display unit 42. The control base screen (SC2) in a displaying display screen (D2), Video camera 11 green on display It observes that the correspondence field (Sd12) changed to red. Video camera 11 It recognizes that the control was transferred and is a remote controller 32 immediately. It is operated and is a video camera 11. When control is started, it is a video camera 11. A control signal goes via a communication network 20, and it is base equipment 101. It is transmitted.

[0035] base 101 setting — camera control unit 21 Inner processor 221 Remote controller 32 from — a communication network 20 and CCE 61 the control signal transmitted by going — being based — video camera 11 It controls (step S8).

[0036] In addition, remote controller 31 An operator is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, video camera 11 red on display the correspondence field (Sd11) started flashing — observing — video camera 11 of a self-base the transfer of a control — remote controller 32 of other bases Or 33 from, although what is demanded has been recognized if negative to the transfer of a control — remote controller 31 from — a refusal signal — camera control unit 21 It transmits.

[0037] camera control unit 21 Inner processor 221 timer 241 until it tells the predetermined timer passage of time — remote controller 31 from — the case where a refusal signal is transmitted — (step S6) — remote controller 32 from — demanded video camera 11 The transfer of a control Remote controller 31 It judges with what was refused and is the control memory 231. Inner video camera 11 Correspondence field 2311 The \*\* which does not update the control maintenance information (C1) stored, The permissible signal over the control demand signal which deleted only control demand information (R2), and was transmitted previously is not returned, but it is a timer 241 further. It resets.

[0038] Control base display 211 Control memory 231 Video camera 11 If it detects that the control demand information on a correspondence field (R2) was deleted Display control device 51 It minds and is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, It is indicated by red and is a video camera 11. Flashing of a correspondence field (Sd11) is stopped and it is a video camera 11. They are other remote controllers 32 about a control. Or 33 It indicates that it did not transfer (step S7).

[0039] On the other hand, it is a base 102. It sets and is the camera control unit 22. Base equipment 101 Even if it receives and transmits a control demand signal, unless a permissible signal is returned, it is a video camera 11. It is a remote controller 32 about a control. It is recognized as not being transferred and is the video camera 11 in the control memory 232. Correspondence field 2312 Present condition maintenance of the control maintenance information (C1) stored is carried out.

[0040] Control base display 212 Control memory 232 Inner video camera 11 Correspondence field 2312 Since control maintenance information (C1) is not updated by control maintenance information (C2), Display unit 42 The control base screen (SC2) in the display screen (D2) displayed, Video camera 11 by which it is indicated by green Present condition maintenance of the correspondence field (Sd12) is carried out, and it is a video camera 11. A control is the self-remote controller 32. It indicates not transferred.

[0041] Remote controller 32 An operator is a display unit 42. Video camera 11 of the control base screen (SC2) in the display screen (D2) displayed It observes that the correspondence field (Sd12) is maintaining the green display,

and is a video camera 11. It recognizes that the control is not transferred and transfer demand actuation of a control is performed again after a while.

[0042] According to this example, so that clearly from the above explanation to the display screen (D) of each base The control base screen (SC) indicates whether the remote controller 3 of the self-base 10 holds the control of the video camera 1 of each base 10. The self-remote controller 3 feels easy to the video camera 1 holding a control, and activation of control operation of it is attained. Moreover, since a demand result is immediately displayed on a control base screen (SC) also when a control is newly required, when finishing [ a transfer ], it becomes possible to start actuation of a video camera 1 immediately.

[0043] In addition, although it does not pass over them in the one example of this invention until drawing 2 and drawing 3 open, for example, the display condition of a control base screen (SC) is not limited to what is illustrated and many deformation is otherwise taken into consideration, the effectiveness of this invention changes to neither of the cases. Moreover, although the video conference system set as the object of this invention is not limited to what consists of three base equipments 10 and many deformation is otherwise taken into consideration, the effectiveness of this invention changes to neither of the cases.

[0044]

[Effect of the Invention] As mentioned above, since recognition of the maintenance situation of the control of the video camera of each base is immediately attained by observing a display screen in said video conference system according to this invention, the need of operating an excessive video camera is also lost and the convenience and operability of the video conference system concerned improve sharply.

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[Translation done.]

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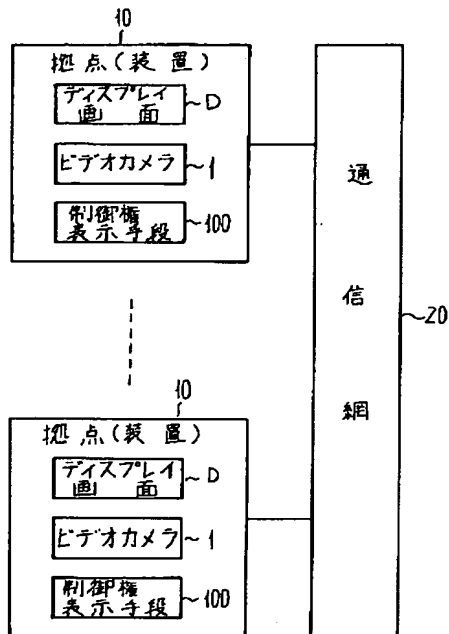
2.\*\*\* shows the word which can not be translated.

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## DRAWINGS

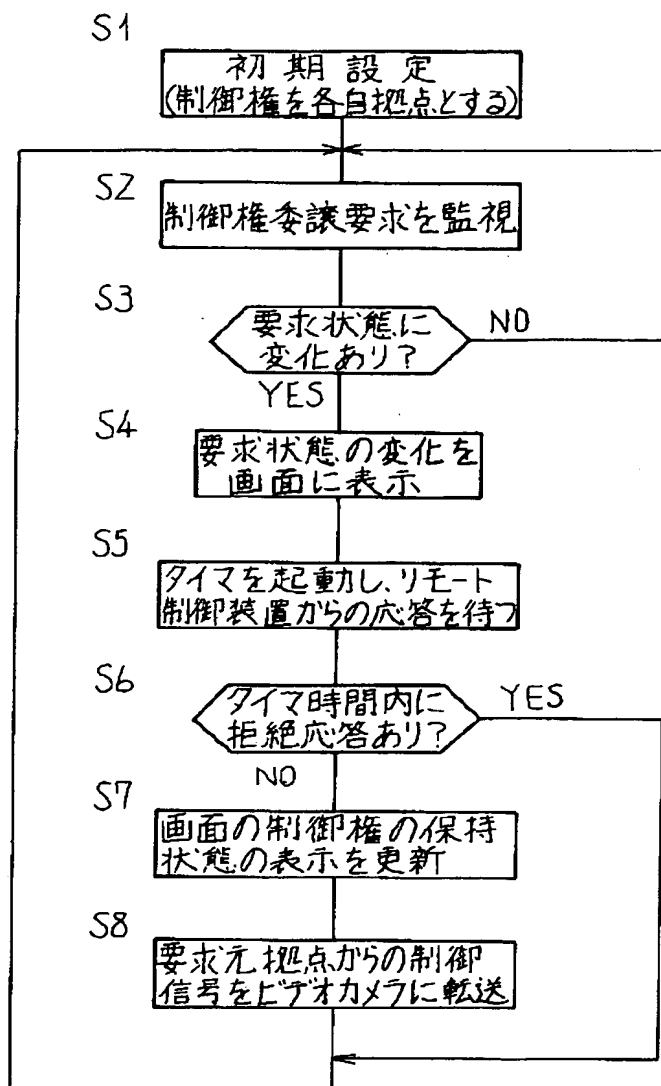
[Drawing 1]

本発明の原理図



[Drawing 3]

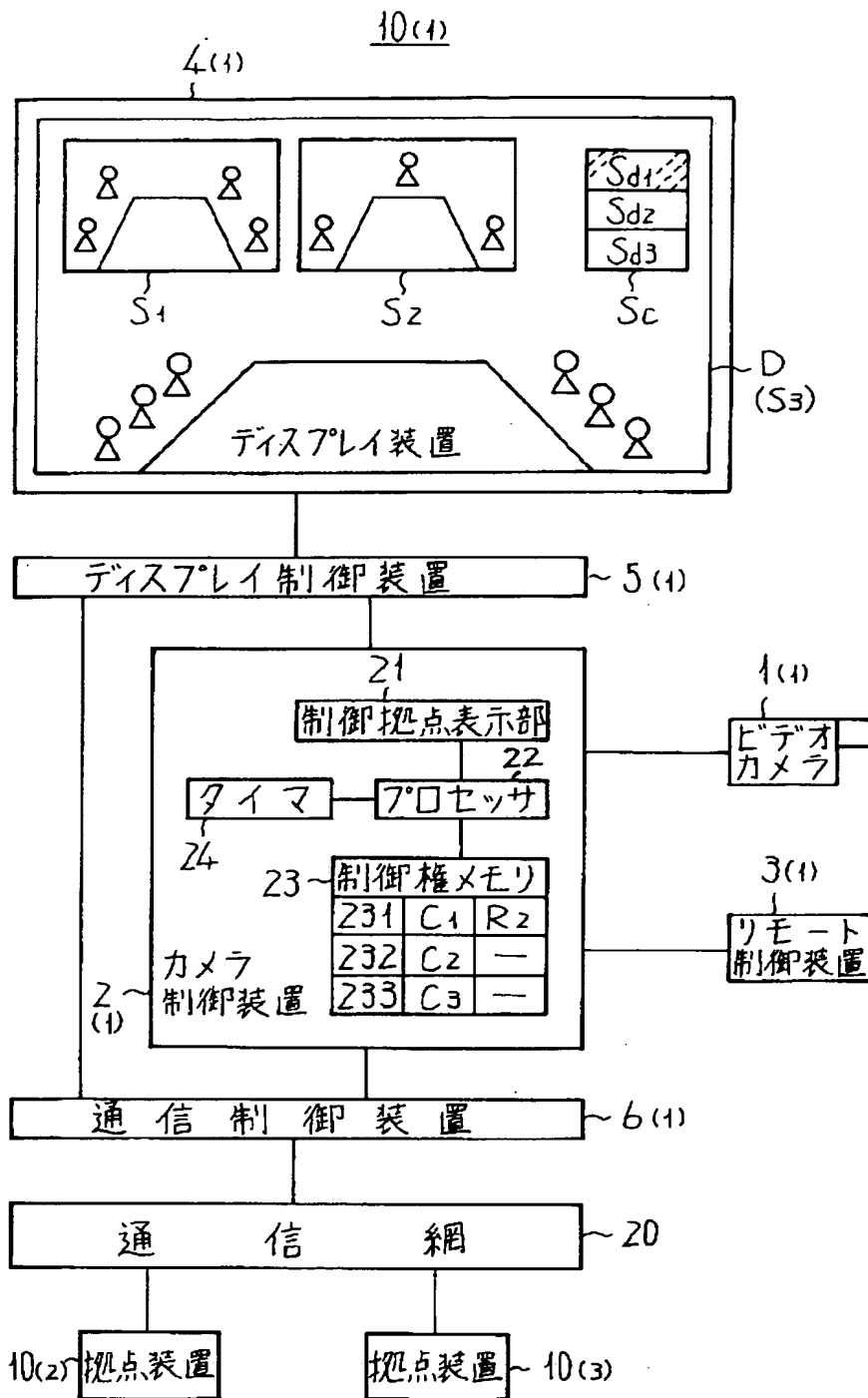
図 2 におけるビデオカメラ制御過程



[Drawing 2]

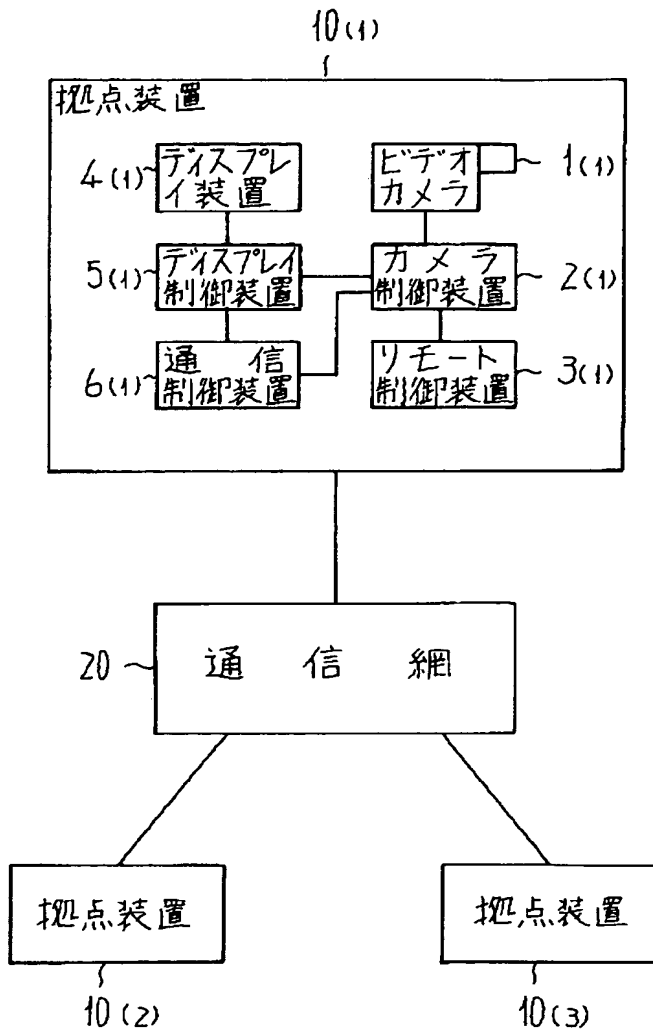


## 本発明によるテレビ会議システム



[Drawing 4]

## 従来あるテレビ会議システム



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EFFECT OF THE INVENTION

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[Effect of the Invention] As mentioned above, since recognition of the maintenance situation of the control of the video camera of each base is immediately attained by observing a display screen in said video conference system according to this invention, the need of operating an excessive video camera is also lost and the convenience and operability of the video conference system concerned improve sharply.

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## EXAMPLE

[Example] Hereafter, a drawing explains one example of this invention. Drawing 2 is drawing showing the video conference system by one example of this invention, and drawing 3 is drawing showing an example of the video camera control process in drawing 2. In addition, the same sign shows the same object through a complete diagram. Moreover, the target video conference system shall consist of three base equipments 10 and communication networks 20 like drawing 4.

[0018] In addition, it also sets to drawing 2 and they are the inside of three base equipments 10, and base equipment 101. A configuration is displayed on a detail and they are the other base equipments 102. And 103 It is omitted. In drawing 2, the control base display 21, the control memory 23, and a timer 24 are formed in the camera control unit 2 of each base equipment 10 as a control display means 100 in drawing 1.

[0019] The remote controller 31 of control maintenance (information C) [each which shows the remote controller 3 which is carrying out current maintenance of the control of the video camera 1 of each base 10 in the control memory 23, 32 And 33 Like (C1) and (C2) (C3) the following which carries out \*\*\*\*, if ] and the remote controller 3 which is carrying out the current demand of the transfer of a control exist, the control maintenance information that it corresponds The control demand information (R) which shows the remote controller 3 of a requiring agency is each video camera 11 and 12. And 13 It is stored in the correspondence fields 231, 232, and 233.

[0020] moreover, the control base screen (SC) which shows the maintenance condition of the control of the video camera 1 of each base 10 to a part of display screen (D) as which the control base display 21 is displayed on a display unit 4 through the display control device 5 — a base screen (S1) — and (S2) (S3) it displays.

[0021] A control base screen (SC) is each video camera 11 and 12. And 13 A corresponding field (Sd1), It consists of reaching (Sd3). (Sd2) The control base display 21 Video camera 1i to which the remote controller 3 within the self-base 10 holds the control The correspondence field (Sdi) (however, any of 1 thru/or 3 is i?) is indicated by red. Video camera 1j to which the remote controller 3 of the other bases 10 holds the control The correspondence field (Sdj) (i however, any of 1 thru/or 3 becoming is j?) is indicated by green. Furthermore, video camera 1i while the remote controller 3 of the self-base 10 is holding a control When it receives and the transfer of a control is required from the remote controller 3 of the other bases 10, it is video camera 1i red on display. A correspondence field (Sdi) is blinked.

[0022] In drawing 2 and drawing 3, if beginning of mission of the video conference system concerned is carried out, it will set to each base equipment 10. The processor 22 in the camera control device 2 Each video camera 11 of the control memory 23, 12 And 13 the correspondence fields 321, 232, and 233 — respectively — control maintenance information (C1) — and (C2) (C3), while storing Control demand information (R) makes the control of each video camera 1 give the remote controller 3 in self-base equipment 10 by deleting all ( drawing 3 step S1).

[0023] Each control base display 21 controls the control base screen (SC) on the display screen (D) displayed on the display unit 4 based on the contents of storing of each control memory 23.

[0024] for example, base 101 Control base display 211 which can be set Video camera 11 in a control base screen (SC1) A correspondence field (Sd11) in red video camera 12 and the field (Sd21) corresponding to 13 — and (Sd31) — green — displaying — moreover, base 102 Control base display 212 which can be set Video camera 12 in a control base screen (SC2) A correspondence field (Sd22) in red video camera 11 And 13 a correspondence field (Sd12) — and (Sd32) — green — displaying — further — base 103 Control base display 213 which can be set video camera 13 in a control base screen (SC3) a correspondence field (Sd33) — red — video camera 11 And 12 a correspondence field (Sd13) — and (Sd23) it displays green.

[0025] Each processor 22 is supervising whether the transfer demand of the control to the self-video camera 1 occurs (step S2). In this condition, it is a base 102. Remote controller 32 Base 101 Video camera 11 The transfer of a control is required and it is the camera control device 22. It receives and is a video camera 11. If a control demand signal is transmitted Camera control device 22 Inner processor 222 Control memory 232 Video camera 11 Field 2312 corresponding to correspondence If it recognizes that control maintenance information (C1) is stored It goes via a communication network 20 and is the current video camera 11. Base equipment 101 holding a control It receives and is a video camera 11. A control demand signal is transmitted.

[0026] base equipment 101 — the control demand information (R2) which shows that the transfer of a control is demanded from the remote controller 32 is stored in the inner video camera 11 correspondence field 2311. setting — camera control unit 21 Inner processor 221 Remote controller 32 from — a communication network 20 and CCE 61 Video camera 11 transmitted by going if a control demand signal is received (step S3) — control memory 231

[0027] Control base display 211 Control memory 231 Video camera 11 Correspondence field 2311 If it detects that control demand information (R2) was newly stored Display control device 51 It minds and is a display unit 41. The control base screen (SC1) on the display screen (D1) displayed, Video camera 11 by which it is indicated by red A correspondence field (Sd11) is blinked and it is a video camera 11. They are other remote controllers 32 about a

control. Or 33 It indicates that it is demanding the transfer (step S4).

[0028] control base display 211 Video camera 11 if a correspondence field (Sd11) is blinked — processor 221 Timer 241 starting — remote controller 31 from — it stands by [ whether a refusal signal is transmitted and ] (step S5).

[0029] Remote controller 31 An operator is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, Video camera 11 red on display It observes that the correspondence field (Sd11) started flashing. self-base 101 Video camera 11 the transfer of a control — other bases 102 Or 103 Remote controllers 32 or 33 from — it recognizing, and what is demanded, if there is no objection in the transfer of a control remote controller 31 from — any refusal signal — camera control unit 21 Send out and there is nothing.

[0030] camera control unit 21 Inner processor 221 timer 241 until it tells the predetermined timer passage of time — remote controller 31 from — the case where a refusal signal is not transmitted — (step S6) — remote controller 32 from — demanded video camera 11 the transfer of a control — remote controller 31 It judges with what was permitted. Control memory 231 Video camera 11 Correspondence field 2311 While updating inner control maintenance information (C1) to control maintenance information (C2), control demand information (R2) is deleted. Moreover, the permissible signal over the control demand signal transmitted previously is gone via a communication controller 61 and a communication network 20, and it is base equipment 102. It returns and is a timer 241 further. It resets.

[0031] Control base display 211 Control memory 231 Video camera 11 Correspondence field 2311 Control maintenance information (C1) is updated by control maintenance information (C2). And when it detects that control demand information (R2) was deleted, it is the display control device 51. It minds and is a display unit 41. The control base screen (SC1) in the display screen (D1) currently displayed, Video camera 11 which it is indicated by red and is blinking A correspondence field (Sd11) is displayed green and it is a video camera 11. Remote controller 32 of others [ control ] Or 33 It indicates transferred (step S7).

[0032] the control maintenance information (C1) stored in the base 102 on the other hand is updated to control maintenance information (C2). setting — camera control unit 22 Inner processor 222 Base equipment 101 from — if the transmitted permissible signal is received — video camera 11 a control — remote controller 32 having been transferred — recognizing — control memory 232 Inner video camera 11 Correspondence field 2312

[0033] Control base display 212 Control memory 232 Video camera 11 Correspondence field 2312 If what control maintenance information (C1) was updated for by control maintenance information (C2) is detected Display control device 52 It minds and is a display unit 42. The control base screen (SC2) in the display screen (D2) currently displayed, Video camera 11 by which it is indicated by green A correspondence field (Sd12) is displayed on red, and it is a video camera 11. A control is the self-remote controller 32. It indicates transferred.

[0034] Remote controller 32 An operator is a display unit 42. The control base screen (SC2) in a displaying display screen (D2), Video camera 11 green on display It observes that the correspondence field (Sd12) changed to red. Video camera 11 It recognizes that the control was transferred and is a remote controller 32 immediately. It is operated and is a video camera 11. When control is started, it is a video camera 11. A control signal goes via a communication network 20, and it is base equipment 101. It is transmitted.

[0035] base 101 setting — camera control unit 21 Inner processor 221 Remote controller 32 from — a communication network 20 and CCE 61 the control signal transmitted by going — being based — video camera 11 It controls (step S8).

[0036] In addition, remote controller 31 An operator is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, video camera 11 red on display the correspondence field (Sd11) started flashing — observing — video camera 11 of a self-base the transfer of a control — remote controller 32 of other bases Or 33 from, although what is demanded has been recognized if negative to the transfer of a control — remote controller 31 from — a refusal signal — camera control unit 21 It transmits.

[0037] camera control unit 21 Inner processor 221 timer 241 until it tells the predetermined timer passage of time — remote controller 31 from — the case where a refusal signal is transmitted — (step S6) — remote controller 32 from — demanded video camera 11 The transfer of a control Remote controller 31 It judges with what was refused and is the control memory 231. Inner video camera 11 Correspondence field 2311 The \*\* which does not update the control maintenance information (C1) stored, The permissible signal over the control demand signal which deleted only control demand information (R2), and was transmitted previously is not returned, but it is a timer 241 further. It resets.

[0038] Control base display 211 Control memory 231 Video camera 11 If it detects that the control demand information on a correspondence field (R2) was deleted Display control device 51 It minds and is a display unit 41. The control base screen (SC1) in the display screen (D1) displayed, It is indicated by red and is a video camera 11. Flashing of a correspondence field (Sd11) is stopped and it is a video camera 11. They are other remote controllers 32 about a control. Or 33 It indicates that it did not transfer (step S7).

[0039] On the other hand, it is a base 102. It sets and is the camera control unit 22. Base equipment 101 Even if it receives and transmits a control demand signal, unless a permissible signal is returned, it is a video camera 11. It is a remote controller 32 about a control. It is recognized as not being transferred and is the video camera 11 in the control memory 232. Correspondence field 2312 Present condition maintenance of the control maintenance information (C1) stored is carried out.

[0040] Control base display 212 Control memory 232 Inner video camera 11 Correspondence field 2312 Since control maintenance information (C1) is not updated by control maintenance information (C2), Display unit 42 The control base screen (SC2) in the display screen (D2) displayed, Video camera 11 by which it is indicated by green Present condition maintenance of the correspondence field (Sd12) is carried out, and it is a video camera 11. A control is the self-remote controller 32. It indicates not transferred.

[0041] Remote controller 32 An operator is a display unit 42. Video camera 11 of the control base screen (SC2) in

the display screen (D2) displayed It observes that the correspondence field (Sd12) is maintaining the green display, and is a video camera 11. It recognizes that the control is not transferred and transfer demand actuation of a control is performed again after a while.

[0042] According to this example, so that clearly from the above explanation to the display screen (D) of each base The control base screen (SC) indicates whether the remote controller 3 of the self-base 10 holds the control of the video camera 1 of each base 10. The self-remote controller 3 feels easy to the video camera 1 holding a control, and activation of control operation of it is attained. Moreover, since a demand result is immediately displayed on a control base screen (SC) also when a control is newly required, when finishing [ a transfer ], it becomes possible to start actuation of a video camera 1 immediately.

[0043] In addition, although it does not pass over them in the one example of this invention until drawing 2 and drawing 3 open, for example, the display condition of a control base screen (SC) is not limited to what is illustrated and many deformation is otherwise taken into consideration, the effectiveness of this invention changes to neither of the cases. Moreover, although the video conference system set as the object of this invention is not limited to what consists of three base equipments 10 and many deformation is otherwise taken into consideration, the effectiveness of this invention changes to neither of the cases.

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MEANS

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[Means for Solving the Problem] Drawing 1 is drawing showing the principle of this invention. In drawing 1 , it is the display screen as which the base equipment with which 10 was installed in two or more bases and these bases 10, the communication network with which 20 connects each base equipment 10 mutually, and 1 displayed the video camera in each base equipment 10, and D displayed the photography result of the video camera 1 of each base. [0013] 100 is the control display means formed in each base equipment 10 by this invention.

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OPERATION

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[Function] The control display means 100 displays the maintenance condition of the control of the video camera 1 in each base equipment 10 in the display screen (D) of each base.

[0015] In addition, it is taken into consideration that the control display means 100 displays the base 10 when self-base equipment 10 holds the control of a video camera 1, and the base 10 of which the transfer of the control under maintenance is required as a maintenance condition of a control.

[0016] Therefore, since recognition of the maintenance situation of the control of the video camera of each base is immediately attained by observing a display screen, the need of operating an excessive video camera is also lost and the convenience and operability of the video conference system concerned improve sharply.

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PRIOR ART

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[Description of the Prior Art] Drawing 4 is drawing showing an example of a certain video conference system conventionally. As for the video conference system illustrated by drawing 4, television conference equipment (a conference hall is henceforth called a base 10, and television conference equipment is called base equipment 10, and each base and base equipment are called 101, 102, and 103) is installed in three conference halls, respectively, and each base equipment 10 is further connected mutually via the communication network 20.

[0003] Each base equipment 10 consists of a video camera 1, the camera control device 2, a remote controller 3, a display unit 4, a display control device 5, and CCE 6, respectively, and a video camera 1 photos the situation of each base 10 under control of the camera control device 2, delivers it to each base equipment 10 via CCE 6 and a communication network 20, and displays it on a display unit 4 under control of the display control device 5 of each base equipment 10. In addition, it sets to drawing 4 and is base equipment 101. Only a configuration is displayed on a detail and they are other base equipments 102. And 103 Base equipment 101 Since it is the same, it is omitted.

[0004] In addition, bearing of the exposure axis, photographic coverage, etc. of each video camera 1 are not only controlled by the remote controller 3 in self-base equipment 10, but are controlled by the remote controller 3 in other base equipment 10.

[0005] for example, base 101 Camera control device 21 The same base 101 Inner remote controller 31 from -- video camera 11 if a control signal is transmitted -- the camera control device 21 -- video camera 11 a control -- remote controller 31 giving -- remote controller 31 actuation -- following -- video camera 11 Bearing of the exposure axis, photographic coverage, etc. are controlled.

[0006] Remote controller 31 An operator is a display unit 41. Self-base 101 displayed He is a video camera 11 by observing ] like the following called a base screen (S1) after photography screen [. It recognizes holding the control.

[0007] moreover, base 101 Camera control unit 21 Remote controller 32 of other bases 10 (for example, base 102) from -- video camera 11 if a control signal is transmitted -- camera control unit 21 Video camera 11 a control -- remote controller 32 giving -- remote controller 32 actuation -- following -- video camera 11 Bearing of the exposure axis, photographic coverage, etc. are controlled.

[0008] Remote controller 32 An operator is the self-base 102. Inner display unit 42 By observing the base screen (S1) displayed, he is a video camera 11. It recognizes having acquired the control.

[0009] in addition, remote controllers 31 and 32 of two or more bases 10 (for example, a base 101 and 102) It is a video camera 11 to coincidence. It is the camera control unit 21 about a control signal. When it transmits Camera control unit 21 According to a predetermined contention control procedure, a control is given to one of the remote controllers 3 (for example, remote controller 31), and it is a remote controller 31 henceforth. Actuation is followed and it is a video camera 11. Although bearing of the exposure axis, photographic coverage, etc. are controlled Remote controller 31 And 32 An operator He is a video camera 11, respectively. As a result of operating it for a while as what acquired the control, it is a remote controller 31. An operator checks that a base screen (S1) changes as actuation of it, and is a video camera 11. Although it is sure that the control is held Remote controller 32 An operator notices that a base screen (S1) does not change as actuation of it, and is a video camera 11. It is judged that the control is not held.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] It sets to a certain video conference system conventionally so that clearly from the above explanation. Each base 101 And 102 Remote controller 31 And 32 An operator Desired video camera 11 It is [ whether the control was held and or not ] a video camera 11 for a while. As a result of performing actuation, by observing whether a base screen (S1) changes as actuation of it While recognizing gradually and requiring long duration by the check of control maintenance, there was inconvenient [ which performs unnecessary actuation in the meantime ].

[0011] this invention -- the maintenance situation of the control of the video camera of each base -- a short time -- and it aims at making recognition possible, without being accompanied by unnecessary actuation.

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TECHNICAL FIELD

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[Industrial Application] This invention relates to the television conference camera control system in the video conference system which holds a conference during two or more bases.

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[Translation done.]